SPECIAL AREAS BOARD

Notes from the Field — January 2017

Managing Cow-Calf Operations to Protect Water Quality!

From Alberta Agriculture & Forestry

Manure is a valuable nutrient source to a farm. However, manure contains nutrients, organic matter and micro-organisms that can contaminate water supplies.

Wintering and Feeding Sites

Wintering and feeding areas beside creeks, rivers, lakes or dugouts can contribute contaminated runoff to these water bodies during spring snowmelt or heavy rainfalls. Cattle with unrestricted access to these water bodies can contaminate them with manure and sediment from damaged stream banks.

Cattle, for example, exert about 10 times the weight or psu as a D-9 Cat . Consequently, cattle can do much damage to streams and banks.

Sediment from erosion impairs water quality and degrades habitat for fish and other aquatic life. Even small cow-calf operations with fewer than 50 cow-calf pairs can affect water quality.

Nutrients from manure can cause unwanted algal growth in dugouts, lakes and rivers. Algal blooms in irrigation canals and dugouts plug water delivery systems and often require costly chemical control. When algae die and decompose, dissolved oxygen in the water is depleted, which often causes fish kills. Decomposing algae can also generate offensive taste and odour problems and increase water treatment costs. Toxins from blue-green algae can be fatal to livestock.

Water supplies contaminated with manure contain fecal coliform bacteria and may have other disease-causing micro-organisms such as *Cryptosporidium* and *Giardia*. These micro-organisms are a threat to public health and can reduce weight gains and productivity in livestock.

One cow can add up to 500,000 fecal bacteria to a stream each day if allowed direct access to the stream. Water with 200 fecal bacterial per 100 mL is unhealthy for swimming. Drinking water must have no fecal bacteria.

Drinking water from dugouts or other surface water supplies must be treated before consumption. Drinking water from these sources should be tested every year.

Protect Water Resources

Good water quality is needed for healthy drinking water for people and livestock, a large, diverse fish population and a healthy, attractive recreational environment.

- **Locate wintering and feeding areas away from water sources.** There is a greater risk of livestock waste affecting surface water if cattle are close to streams, rivers and lakes. Provide shelter for cattle away from water sources.
- **Set up alternative water supply.** Cattle often prefer drinking water from troughs rather than wading into water, even if the water source is not fenced off. Alternative water supplies protect water sources by eliminating deposition of animal wastes in the water and minimizing shoreline disturbance. Solar, wind, battery, gravity or animal-powered (e.g. nose pump) pumping systems are available.
- **Use rotational grazing.** Rotating cattle in fenced paddocks allows better forage management and controls cattle access to streams. Time-controlled grazing reduces nutrient and sediment runoff by reducing the amount of manure in any one area and limiting the time spent by cattle near fragile areas like stream banks.
- **Fence cattle away from streams and dugouts.** Fencing water sources improves herd health by reducing livestock contact with waterborne micro-organisms. Fencing also stabilizes stream banks, prolongs dugout use, reduces soil erosion and protects vegetated areas along water bodies. Cattle that must wade into water bodies to drink have an increased risk of foot rot and leg injuries. They can also have reduced weight gains due to drinking contaminated water.

- **Maintain vegetation along streams, lakes and dugouts.** Areas beside water bodies with vegetation like willows, poplar and grasses are known as riparian areas. Riparian areas help filter sediment and nutrients from runoff and reduce bank erosion.

SPECIAL AREAS BOARD

Notes from the Field — January 2017

Let's Talk Canola!

Now we are into 2017, producers are finalizing plans for the upcoming season. Some risks can be mitigated by moving towards best management practices to help minimize possible disease effects. With a strong Canola market and expanding export markets maximizing yields while protecting fields from preventable sources of yield loss is critical to preserving the quality and quantity of Canadian canola production.

CLUBROOT

What is it? A typically soil borne fungal disease that can affect any cruciferous crop, and is of particular concern to canola yields in western Canada.

What are the symptoms? Yellowing, wilting, stunted growth, premature ripening, and shriveled seeds in infected fields are all signs of a possible clubroot infection. The presence of nutrient sink galls on the roots are a signature sign of the fungus. Symptoms will vary based on the stage of infection on the crop.

Premature ripening. Photo Stephen Srelkov

What's the big deal? Similar to sclerotinia, half of the percentage of infected plants in the field can correlate to percentage of yield loss from the fungus. Studies have shown in fields nearly totally infested, there was about a 50% loss in yield. Similarly in fields with 10% to 20% levels of infestation there was a yield loss of 5-10%. Because soil is a primary vector for the spread of this disease, machinery and vehicles are a much greater risk of infection to healthy soils. Additional concerns include wind and water erosion moving infected soils around, contaminating areas dozens of miles from the source site.

Severe clubroot galls. Photo Kelly Turkington

What can you do about it? There are many factors of soil health which leave a field susceptible to infection, and using best management practices help to minimize risk. Susceptible fields have acidic soil, are poorly drained, or are overwatered irrigated fields.

Best Practices—Planting resistant varieties diminishes the risk of a clubroot infection. It does not guarantee a clubroot free field, but it minimizes risk of infection and severity of symptoms resulting in lower yield loss. Contact your seed supplier to make sure your operation is up to date on the latest resistant varieties. Be aware although resistant varieties are a good measure to take, they should not be the only measure. A diverse line of defense to is a better line of defense for your fields.

Best Practices—Proper crop rotation is key to keeping any crop healthy and disease free, and is particularly important to mitigate risk of clubroot infection. Crop rotation cannot completely protect clean fields, but increases the clean field's ability to resist clubroot and other diseases and prevent any type of severe infestation. The longer and more varied the rotation, the better resistance to clubroot infestation.

MINIMUM guidelines suggest at least 3 years out of canola before reseeding to the oilseed again.

Best Practices—Good sanitation practices between fields not only minimizes the spread of clubroot, but also the spread of weeds, insects, and other diseases as well. While it might not seem practical to do a full disinfection protocol every time machinery moves fields; it is reality if clubroot infects the field. Making small efforts to clean equipment and vehicles laden with dirt and mud from previous fields helps close the door on the vehicular vector for the movement of clubroot. It can be as simple as knocking off extra mud and dirt sticking to machinery before you leave the field, or blowing of machinery each time you bring it to the yard, minimizing transfer between fields.

Moderately infected Photo Valerie Sowiak

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SPECIAL AREAS BOARD

Notes from the Field — January 2017

Meet your Agricultural Service Board!

The first Agricultural Service Board (ASB) for the Special Areas was formed September 1, 1961. At that time the entire Special Areas (2, 3 and 4) operated as a single board under the Agricultural Service Board Act. It wasn't until January 1, 1974 that a resolution passed for each area to form individual ASB's, however to this day, the three ASB's continue to work very closely together. Each ASB appoints an Agricultural Fieldman to implement ag policies and programs, as set out by the ASB.

ASB's act as an advisory body to assist the council and the Minister in matters of mutual concern, particularly pertaining to weed and pest control, soil and water conservation and assistance with the Animal Health Act. It is the duty of ASB's to promote, enhance and protect viable and sustainable agriculture, with an aim to improve the economic viability of agricultural producers in our area.

In Special Areas, the Ag Service Boards are made up of 2 appointed Advisory Council members and a maximum of 5 Farm Members. These members are elected by the ASB and are from various parts of each Special Areas, representing the broad range of needs across our vast municipality.

SA 2 Ag. Service Board (left to right)
Kevin Bossert (Farm Member), Nathan Berg (Farm Member), Lee Quaschnick (Farm Member), Derek Christensen (Farm Member), Greg Standing (Farm Member), Neal Roes (Council Member & Chairman), and Brad Osadczuk (Council Member & Vice Chairman).

Check out Page 6 for more information on upcoming events and seminars!

Let's Talk Canola! (Cont'd)

How do you find clubroot?

Under the Agricultural Pest Act- the Agricultural Fieldmen, in conjunction with Alberta Agriculture and Forestry, conduct random field inspections each year looking for signs and symptoms of the disease. Any symptomatic finds are sampled, and sent to a lab to be tested. If you find any suspicious galls on any plants don't hesitate to contact your local Ag Fieldman at your nearest district office.

There have been no positive clubroot fields found in the Special Areas to date, however its confirmation in neighboring municipalities requires all of us to be extra vigilant in preventing its establishment in our area.

Looking for more information?

Talk to your local Ag Fieldman or district office today. Some further resources include: the Special Areas Clubroot Policy, the Alberta Clubroot Management Plan, and the Canola Council of Canada

References

Alberta Agriculture and Forestry. 2015. Agri-facts 140/638-1. *Clubroot Disease of Canola and Mustard.*
-Canola Council of Canada. *Canola Encyclopedia- Clubroot.*
-Saskatchewan Ministry of Agriculture. *Clubroot of Canola- Factsheet.*
-Agriculture and Agri-Food Canada. 1999. *Clubroot of Crucifers- Control strategies*

For more information, go to www.specialareas.ab.ca or visit us on our Facebook page and Twitter @Special Areas.

SPECIAL AREAS BOARD

Notes from the Field — January 2017

Forage Bales May Be Hiding Noxious Weed Fugitives!

Checking the source of your livestock feed is imperative to keeping our municipality—and your farm—weed free. Bales are a common way to introduce noxious weeds onto your property, and can become a huge headache for you in years to come. You don't have to go far to find weed infested bales. Within the Special Areas, there are sites where noxious weeds exist.

Weeds that exist in Special Areas are easily baled and transferred from farm to farm. They include scentless chamomile, leafy spurge, baby's breathe, Canada thistle, downy & Japanese brome, and white cockle, to name a few.

Russian & spotted knapweed are prohibited noxious weeds identified in isolated populations within Special Areas. These likely came on vehicles or feed from the US as Montana currently has a severe knapweed infestation Albertans are working hard to keep out. These regulated species are prolific seed producers and can quickly spread, reduce your hay or crop stand, compete with native plants and drain resources beneficial plants require.

Knapweed found in a bale—MT—Photo credit: Kelly Cooley

In Alberta, it is the responsibility of the landowner to control noxious and prohibited noxious weeds.

A single scentless chamomile plant can produce as many as a million seeds in its biennial life cycle, and the seed can be viable for up to 15 years! In dense stands as many as 1.8 million seeds per square meter may be produced. And as much as 26% of the seed will remain viable after passing through the rumen of a cow.

Some weeds can accumulate nitrates under stressful growing conditions, which are then toxic to livestock when fed in hay. There is a great guide to identifying poisonous plants available online or at your Special Areas District Office. Sharp awns, like those found on downy brome can injure livestock that feed on it.

How To Protect You and Your Herd

When growing your own forage crops, use only certified seed, which will be accompanied by a weed seed test certifying it is clean. Prior to seeding your forage, ensure complete weed control in the annual crops seeded before. It is easiest to start with a clean slate, as there are limited in-crop weed control options for hay stands. During seeding, use management practices promoting vigorous stand establishment, making it harder for weeds to grow. Use high quality seed, planted into a firm seedbed with adequate moisture, and use inoculants for legume crops. If you spread manure, consider composting it first to reduce seed viability, or spread it on crops which have chemical control options, rather than your hay. Consistently scout your forage crops for problematic weed species throughout the year using the Alberta Invasive Plants Identification Guide (hard copies available at the Special Areas offices). Spot treatments can be applied to prevent whole crop infestation.

If you currently have a weed infestation problem there are a few things you can do to minimize the spread. Talk to your Ag Fieldman about the timing of cutting for particular weeds. For some weed species you can cut the crop early when weed seeds are immature and non-viable. Ensiling bales (haylage or balage) has been known to reduce the viability of weed seeds. A combination of ensiling and rumen digestion may be an effective strategy to minimize weed seed viability. If the weeds are palatable and safe for livestock, grazing to prevent regrowth may be an option as well.

If purchasing from neighbours, ask them about their weed control program and if they have seen any noxious weeds in their fields. During the summer you can ask to tour their fields if you plan on purchasing hay from them. Scentless chamomile, baby's breathe and Canada thistle are easily spotted. You can also send samples of your forage to 20/20 Seed Labs for weed seed identification using a bale probe (available for rent from CARA).

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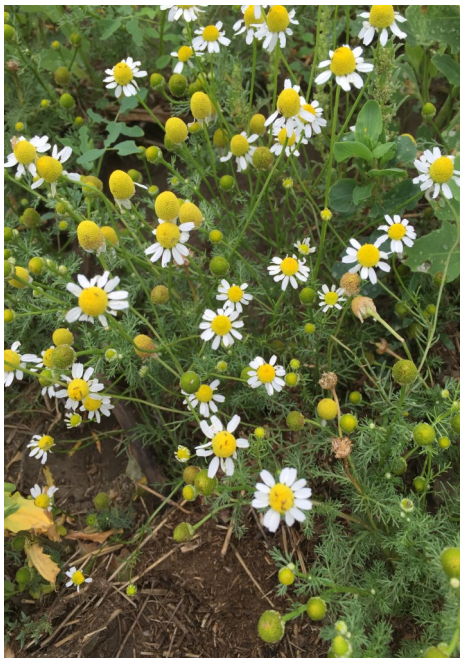
SPECIAL AREAS BOARD

Notes from the Field — January 2017

Forage Bales May Be Hiding Noxious Weed Fugitives!

Visually inspect the bales you already have purchased as you may be able to see baby's breathe tumble weeds or the thistles & heads of Canada thistle. Seeds will be difficult to notice but you may see stems and flowers of plants that aren't typical to your forage.

In the spring and summer, go back to your wintering sites where you fed forages, where you store or spread manure and compost. Actively scout these areas for weed establishment. Also, visually inspect your feed yards. Scentless chamomile is often found lurking in hay yards, spreading outward into fields. Early detection and rapid response are vital in protecting your land from these invasive species. Remember that if you suspect a noxious weed you can call your Ag Fieldman for identification and 4 free hours of noxious weed control.



In Alberta, you can also buy Certified Weed Free Hay. This program is consistent with the North American Weed Free Forage Certification Program. You can search the Alberta Agriculture and Rural Development Hay, Straw & Pasture Listings website for certified weed free hay, depicted by their weed free logo. If you are interested in certifying your hay as weed free, contact your local Ag Fieldman.

FARM SAFETY TIPS

Special Areas 2 has Cattle Moving signs available for use, free of charge!

Stop by the District Office or call/text Jesse Williams at (403) 854-1114 to reserve them today.

Your Agriculture Fieldmen

JESSE WILLIAMS

SA2

(403) 854-5625/
(403) 854-1114

DON HOGAN

SA3

(403) 664-3618/
(403) 664-5585

JUSTINE SIMPSON

SA4

(403) 577-3523/
(403)575-5525

We offer support for programs including:

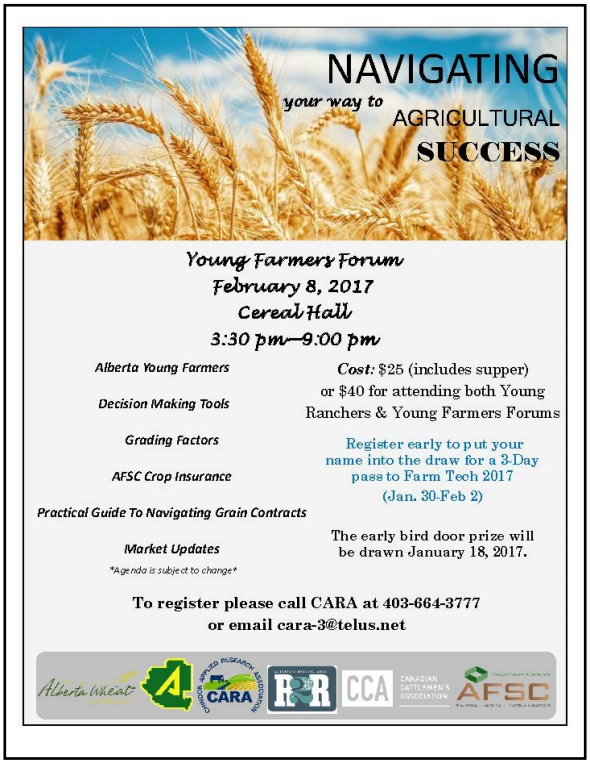
- Plant identification & noxious weed control
- Grazing management & strategies
- Pest management & controls
- Growing Forward 2
- Environmental Farm Plans
- Shelterbelt programs & planning
- Animal predation concerns
- Equipment rentals including RFID tag readers & pest traps
- Concerns related to *Soil Conservation Act, Weed Control Act, Agricultural Pest Act, Animal Health Act,* and other legislation.

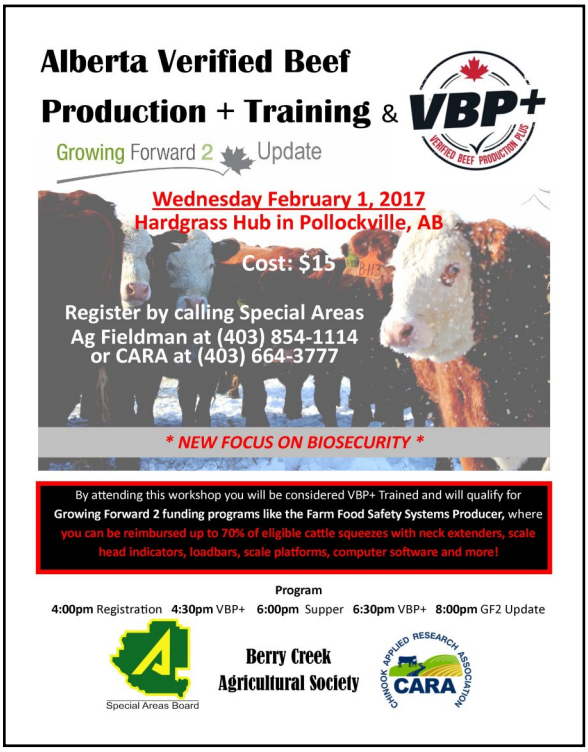
For more information, go to www.specialareas.ab.ca or visit us on our Facebook page and Twitter @Special Areas.

SPECIAL AREAS BOARD

Notes from the Field — January 2017

Upcoming Events!





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